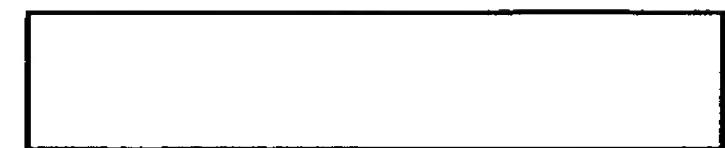


CONCISE EXPLANATION OF REFERENCES



US Patent	File Date	Publication Date Or Issue Date	Comments
JP (A) 2000-130123	Oct. 22, 1998	May 9, 2000	<p>In a valve driving device, a ring-type sensor is provided on the periphery of a taper part of an armature shaft. Then, the valve position can be accurately and reliably detected by directly detecting the moving speed and the position of an armature by this ring-type sensor. Voltage is applied to an upper coil, the moving speed and the position of the armature are detected by the ring-type sensor, and correction for the upper coil applied voltage is performed by feedback control on the basis of the detected signal output from the ring-type sensor. Therefore, the failure of attraction of the valve and a hard hit of the valve can be prevented. Accordingly, valve attraction is reliably performed, and the generation of hammering sound in valve closing can be reliably reduced.</p>
JP (A) 2001-130124	Oct. 26, 1998	May 9, 2000	<p>In an electromagnetic driving device for a valve element of an internal combustion engine, electromagnetic force generated when voltage is applied to electromagnetic coils wound around the cores is made to act on movable elements positioned in spaces in cores, and valve elements of the engine are driven by</p>

			drive shafts to which the movable elements are fixed. Each core is composed of two core members connected to each other while forming a movable range for the movable element, and a non-contact type displacement detecting means for detecting the movement of the drive shaft is housed in each inner space formed of the cores. By this configuration of the electromagnetic driving device, a small size thereof is easily achieved without needing any special place.
JP (U) 63-126817	Feb. 10, 1987	Aug. 18, 1988	In a detecting device for detecting a displacement of an movable element, the movable element has a tapered surface. The detecting device has two sensors. The movable element is sandwiched between the two sensors of the detecting device. The detecting device measures two gaps between the tapered surfaces and the sensors of the detecting device.